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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/325,705	06/04/1999	TORU YAMADA	088941-0138	3162

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EXAMINER	
WONG, ALLEN C	

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/325,705	YAMADA, TORU	
	Examiner	Art Unit	
	Allen Wong	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/11/05 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-10 have been read and considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yonemitsu (5,485,279), Matsushima (5,453,788) and Kim (6,104,753) in view of Suzuki (5,872,600).

Regarding claims 1 and 3, Yonemitsu discloses a method for displaying frames of a dynamic image using single field data from an interlaced encoded image data having a two-field structure, comprising the steps of:

performing inverse quantization of the interlaced encoded image data to obtain DCT (Discrete Cosine Transform) coefficients of each of a plurality of field blocks that comprise a frame (fig.15, element 72);

selecting only one of two fields that form the frame, each field consisting of some of the plurality of field blocks (fig.9A, element 52; see fig.29 and col.29, ln.3-8, at the field encoding mode, note only one field, ie. even or odd, is selected for use during the determination of the frame based on the pixel data calculations, where each field has some of the plurality of field blocks in which a group of field pixels form a field block);

adding zero values after the DCT coefficients of each of field block in the selected field in order to obtain compensated DCT coefficients having a data size corresponding to a frame block (fig.15, element 92); and

performing inverse DCT of the compensated DCT coefficients to obtain image data corresponding to a frame block (fig.15, element 93); and

displaying the image data (fig.15, note "SDTV SIGNAL" is the signal displayed at output).

Although Yonemitsu's element 92 is not specifically the "adding the zero values..." and "doubling the size of DCT coefficients", as described in the applicant's specification, because the zero values are used to make the block smaller (ie. from 8x8 block to 4x4 block). However, Matsushima teaches the adding of zero values, high frequency components, after the DCT coefficients is done to enlarge the image data size (see fig.5C and col.5, lines 4-8; note the high frequency components are added, thus, the size of the DCT coefficients can be doubled after the addition of zeros).

Therefore, it would have been obvious to one of ordinary skill in the art to implement the teachings of Yonemitsu and Matsushima as a whole for permitting the size adjustment of the selected field block into having the size of the frame block (ie. doubling) so as to yield superior image quality (Matsushima col.2, ln.19-22). Doing so would allow the viewer to clearly see the image data at an appropriate image resolution at a highly efficient decoding speed and reduce costs.

Although Yonemitsu and Matsushima do not specifically disclose "to half the size of the DCT coefficients and for each frame, selecting only one, but not both, of two fields that form the frame, each selected field consisting of selected field blocks", however, Kim teaches the decimation of the frame to half the size of the DCT coefficients and for each frame, selecting only one, but not both, of two fields that form the frame, each selected field consisting of selected field blocks (see figs.10 and 11 and col.8, ln.43-57; note in figs.10 and 11, the size of the DCT coefficients are halved for each frame, in that the size goes from 8x4 to 4x4, and as seen in flowchart of fig.12, there is only one, but not both, of two fields is selected as step S45 decimates even lines of the frame to form a selected field which consists of field blocks). Therefore, it would have been obvious to one of ordinary skill in the art to combine Kim's teaching into the combination of Yonemitsu and Matsushima for improving the image quality of the display of HDTV video images in an accurate, efficient manner, and for reducing financial costs (Kim col.4, ln.10-22).

Yonemitsu, Matsushima and Kim do not specifically disclose the limitation of discarding of the non-selected field. However, Suzuki teaches the limitation of

discarding of the non-selected field (col.5, ln.62 to col.6, ln.9 and col.6, ln.26-34; note deletion or discarding of unneeded fields from the preset or preselected fields). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Yonemitsu, Matsushima, Kim and Suzuki, as a whole, for efficiently producing clearer video data at the display for viewing while maintaining high image quality by eliminating extraneous, redundant data (Suzuki col.2, ln.55-63).

Note claim 3 has similar corresponding elements.

Regarding claims 2 and 4, Yonemitsu discloses the motion compensation process (fig.15, element 76).

Regarding claim 5, Yonemitsu and Matsushima similarly disclose the limitations as elaborated above for claim 1, and in addition, the compressed data buffer (fig.15, element 71; note the compressed data is temporarily stored). Although Yonemitsu does not specifically disclose the frame data buffer, it would have been obvious to one of ordinary skilled in the art to include a frame data buffer for storing image frame data to prevent loss of important image frame data. Doing so would retain vital image data and prepare it for high-quality image display. Also, memory is extremely affordable and it can be bought at relatively low costs.

Although Yonemitsu and Matsushima do not specifically disclose "to half the size of the DCT coefficients and for each frame, selecting only one, but not both, of two fields that form the frame, each selected field consisting of selected field blocks", however, Kim teaches the decimation of the frame to half the size of the DCT coefficients and for each frame, selecting only one, but not both, of two fields that form

the frame, each selected field consisting of selected field blocks (see figs.10 and 11 and col.8, ln.43-57; note in figs.10 and 11, the size of the DCT coefficients are halved for each frame, in that the size goes from 8x4 to 4x4, and as seen in flowchart of fig.12, there is only one, but not both, of two fields is selected as step S45 decimates even lines of the frame to form a selected field which consists of field blocks). Therefore, it would have been obvious to one of ordinary skill in the art to combine Kim's teaching into the combination of Yonemitsu and Matsushima for improving the image quality of the display of HDTV video images in an accurate, efficient manner, and for reducing financial costs (Kim col.4, ln.10-22).

Yonemitsu, Matsushima and Kim do not specifically disclose the limitation of discarding of the non-selected field. However, Suzuki teaches the limitation of discarding of the non-selected field (col.5, ln.62 to col.6, ln.9 and col.6, ln.26-34; note deletion or discarding of unneeded fields from the preset or preselected fields). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Yonemitsu, Matsushima, Kim and Suzuki, as a whole, for efficiently producing clearer video data at the display for viewing while maintaining high image quality by eliminating extraneous, redundant data (Suzuki col.2, ln.55-63).

Regarding claim 6, Yonemitsu discloses the motion compensation process (fig.15, element 76).

Regarding claim 7, Yonemitsu discloses a display (fig.15, note "SDTV SIGNAL" is the signal displayed at output).

Regarding claims 8 and 9, Yonemitsu discloses a data buffer that temporarily stores the interlaced encoded image data, wherein the interlaced encoded image data in the data buffer is subjected to inverse quantization (fig.15, element 71, note element 71 can also be considered a temporary storage for the interlaced encoded image data since it precedes the next step of inverse quantization at element 72; also Yonemitsu's figure 13 shows that element 70 or element 71 can be used to temporarily store the image data before subjecting the image data to inverse quantization circuit 72).

Regarding claim 10, Yonemitsu discloses the image data can be reproduced as having the same size as the original image (fig.15, note the compressed image data received at inverse VLC 71 can yield the same size image at the HDTV signal output). Yonemitsu does not specifically disclose the zero values are added to the calculated DCT coefficients of each field block to double the size. However, Matsushima teaches the adding of zero values, high frequency components, after the DCT coefficients is done to enlarge the image data size (see fig.5C and col.5, lines 4-8; note the high frequency components are added). Therefore, it would have been obvious to one of ordinary skill in the art to implement the teachings of Yonemitsu and Matsushima as a whole for permitting the size adjustment of the selected field block into having the size of the frame block so as to yield superior image quality. Doing so would allow the viewer to clearly see the image data at an appropriate image resolution at a highly efficient decoding speed and reduce costs.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (571) 272-7341. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Allen Wong
Primary Examiner
Art Unit 2613

AW
8/30/05